

New species and records of South African Canaceidae (Diptera).

by

WILLIS W. WIRTH

Entomology Research Branch, United States Department of Agriculture
Submitted through B. R. Stuckenberg, Natal Museum.

The purpose of this paper is to report on new species and records of South African intertidal flies of the family Canaceidae collected and sent to me during the last few years by Mr. B. R. Stuckenberg of the Natal Museum. When I reviewed this family in 1951 (*Occas. Papers B. P. Bishop Museum* 20: 245-275) the only known South African species were *Canace cala* Cresson and *Nocticanace cafraria* (Cresson), each known from only a single specimen collected at East London, Cape Province.

Because of his personal interest in intertidal flies, Mr. Stuckenberg devoted special attention to collecting this little-known group in various locations in South Africa, with very remarkable results. In addition to long series of both of Cresson's species, he also succeeded in obtaining a new species of *Xanthocanace*, and three new species of *Canace*. The types of the new species are deposited in the U. S. National Museum in Washington, and paratypes will be distributed to Mr. Stuckenberg at the Natal Museum, Pietermaritzburg, the South African Museum at Cape Town, to the British Museum (Natural History) and to the Academy of Natural Sciences of Philadelphia.

Genus *Xanthocanace* Hendel.

Xanthocanace capensis n. sp.

Male, female. Length about 3 mm., wing 2.8 mm. by 0.95 mm.

Black, densely covered with grayish-white pollen; frontal orbits dark violet gray; mesofrons, mesonotum except extreme sides, and scutellum brownish; antennae black; palpi yellow; extreme ends and femora at knees, tibiae entirely and first four tarsal segments, yellow; fifth tarsal segment black; halteres yellowish white; wings opaque pearly gray, the veins brown except yellow at extreme bases of wings. Macrochaeta reduced to small yellowish hairs; body hairs very soft and fine, white in colour; spines on ventral apices of tarsal segments black.

Frons nearly triangular in dorsal view, as long as width at level of posterior ocelli; anterior half extending forward ahead of eyes, surpassing bases of antennae by length of an antenna; mesofrons with minute, suberect, rather

dense, whitish pile; ocellars and interfrontals not apparent; orbitals and inner and outer verticals scarcely differentiated. Face deeply excavated by the prominent clypeus, which is as high as middle portion of face above it. Cheek about twice as wide as third antennal segment, with four or five minute hairs along oral margin. Occiput strongly developed, convex, with a row of yellowish hairs on each side.

Mesonotum and scutellum with very dense, fine, suberect white pile, that on scutellum rather long; one pair of humerals, two pairs of notopleurals, two pairs of dorsocentrals close to scutellum and three pairs of scutellars, the latter, except for the apical pair, situated well away from the margin; all bristles inconspicuous and sometimes difficult to differentiate from the longer pile. Mesopleuron and sternopleuron with fine white hairs. Legs also with fine, white, inconspicuous hairs. Wing with second costal section 3.7 times as long as third; fourth vein very strongly arcuate, first posterior cell considerably narrower at 0.6 its length than at its apex; last section of fourth vein slightly more than twice as long as next to last section. Abdomen with first apparent tergite about half as long as distal ones combined, segments with long, suberect, fine white pile. Spine of female ovipositor valve small, black, projecting caudoventrad.

Holotype male, allotype, Kleinemonde River, sea water, near Port Alfred, Cape Province, 8 May 1953 (A. C. Brown) (Type No. 62711, U.S.N.M.). Paratypes: 7 males, 8 females, same data as type; 1 female, Zwartkops River Estuary, on shores of sea water ponds and marshes, near Port Elizabeth, 16 February 1953 (Stuckenberg).

In color, chaetotaxy and wing venation, *capensis* is closest to *X. magna* (Hendel) from Formosa, but that species differs in its much larger size (4.5 mm.), its tibiae dark except at extreme apices, the small hairs as well as the bristles of the body bright yellow, and the ventral tarsal spines not black but yellow.

Genus *Canace* Haliday

The four South African species of *Canace* are very closely related, but are separable by the key given below. These species apparently are far more closely related to the American *snodgrassi* (Cocquillet) and *aldrichi* Cresson than to the European *nasica* Haliday and *salonitana* Stöbl. Both the American species have the fore femur armed anteroventrally with heavy, black spines similar to those of one of the species reported below.

Key to the South African species of *Canace*

1. Setae on lower pleura pale and very fine; fore femur without anteroventral spines; mid femur of male with prominent posteroventral series of black bristles 2
- Setae on lower pleura black; fore femur with anteroventral spines (except in male of *cala*); mid femur of male without prominent posteroventral bristles 3

2. Head greatly produced triangularly in front of eyes, mesofrons attaining lunular margin, with a bare median area between interfrontals extending its entire length; legs with fine white hair, without black bristles except for 1-4 posteroventrals on fore femur and in male with 8-12 posteroventrals on mid femur *glauca* n.sp.
- Head only slightly produced in front of eyes; mesofrons in form of a triangle extending not more than three-fourths way to lunular margin, the median bare area small; legs with abundant black bristles and fine white hairs; mid femur of male with conspicuous posteroventral series of about 15 black bristles *stuckenbergi* n.sp.
3. Fore femur of male without black anteroventral bristles, that of female with 6-8 slender ones close together on distal half; smaller species (2.75 mm.) *cala* Cresson
- Fore femur of both sexes armed anteroventrally with 4-6 widely spaced, very stout black spines on distal half; large species (3 mm.) *spinosa* n.sp.

Canace glauca n.sp.

Male, female. Length 2.5-3 mm., wing 2.6 mm. by 0.9 mm.

Black, densely covered with pale greenish-gray pollen, posterior mesofrons and disc of mesonotum and scutellum more or less reddish brown; basitarsi and halteres yellowish. Wings grayish, subopaque; veins yellowish at extreme bases, brownish distally. Bristles of head and thorax black.

Frons 1.25 as long as posterior breadth, tapering cephalad, the anterior third projecting triangularly ahead of the eyes, the lunule thus bent angularly forward between the antennae. Mesofrons marked only by darker colour with brownish infuscation, greatly narrowed cephalad but narrowly open to lunule, about six pairs of strong proclinate interfrontals along lateral margins, delimiting a completely bare mesal space extending from ocelli to lunular margin. Ocellars, postocellars, four pairs of orbitals, and inner and outer verticals well developed. Frontalis each with only about a dozen black setae; ocellar prominence setulose. Antennae separated by about twice the width of third antennal segment by the prominent median facial carina; face nearly vertical in profile; clypeus broadly exposed, about three times as broad as high, as high as width of third antennal segment. Face with one mesally inclined bristle on oral margin; cheek with two upcurved bristles, one near eye and other at oral margin at same level as facial; no apparent setae between the three large bristles. Cheek as broad as height of eye.

Mesonotum with one large and one smaller humeral, two notopleurals, one presutural, one supra-alar and one intra-alar, four dorsocentrals (1:3), one prescutellar acrostichal, two marginal scutellars and two mesopleurals on each side. Mesonotal and scutellar setae strong and black, the acrostichal setulae seriate. Mesopleuron and sternopleuron with fine, white, soft hairs only. Legs with soft, fine white, inconspicuous hairs entirely except for one to two (♀) or four (♂) black ones in posteroventral series on fore femur and, in male,

with a posteroventral series of 8-12 black bristles on mid femur. Tarsi with black ventral spinules; claws and pulvilli very large, the latter pad-like. Last section of fourth vein 2.1 times as long as preceding section.

Abdomen with scattered white hairs and a sparse posterior row of black hairs on each tergite; first apparent tergite as long as remaining tergites combined; female ovipositor valves shining black and slender, only slightly curved, as long as third antennal segment. Male with lobe of ninth tergite stout and nearly straight, its apex not bent or hook-like.

Holotype male, allotype, Gamtoos River, lower reaches within 2 miles of sea, 35 miles west of Port Elizabeth, Cape Province, 1 June 1953 (Stuckenberg) (Type No. 62712, U.S.N.M.). Paratypes: 23 males, 18 females, same data as types; 4 males, 7 females, Zwartkops River Estuary, Port Elizabeth, Cape Province, on shore of a small brack-water pond on mud flats, 2 December 1952, 16 February 1953 (Stuckenberg).

Canace stuckenbergi n.sp.

Male, female. Length about 3 mm., wing 3.0 mm. by 1.1 mm.

Closely resembling *glauca* n.sp., differing as follows: frons shorter, scarcely as long as breadth at level of anterior ocellus; only the anterior fifth projecting ahead of eyes; lunule bent in a very obtuse angle between bases of antennae. Mesofrons extending not more than three-fourths distance to lunular margin, delimiting only a small, triangular bare space anterior to the median ocellus. Small hairs in the series of facial and lower genal bristles very small, white or black in colour. Legs with abundant black hairs on dorsal surfaces of femora, those on ventral sides of femora and on tibiae pale. Fore femur of both sexes with about 4 black bristles in posteroventral series; mid femur of male with a conspicuous posteroventral series of about 15 long black bristles. Last section of fourth vein 2.4 times as long as preceding section. Lobe of ninth tergite of male with very slender and sinuate tip.

Holotype male, allotype, Gamtoos River, lower reaches within 2 miles of the sea, 35 miles west of Port Elizabeth, Cape Province, 1 June 1953 (Stuckenberg) (Type No. 62713, U.S.N.M.). Paratypes: 2 males, 7 females, same data as type; 2 males, 1 female, Sydenham, near Port Elizabeth, on saline lake shore, 3 December 1952 (Stuckenberg); 1 female, Kabeljous River, sea water, 42 miles west of Port Elizabeth, 1 June 1953 (Stuckenberg).

This fly is named in honor of Mr. B. Stuckenberg, the collector, to whom I am greatly indebted for the material on which this paper is based:

Canace cala Cresson

Canace cala Cresson, 1934, *Trans. Amer. Ent. Soc.*, 60: 220. (female, East London, Cape Province).

Cape Province, on shores of Zwartkops River at upper reaches near Perseverance, Port Elizabeth, 16 February 1953 (Stuckenberg), 3 males, 11 females (Natal Museum), 4 males, 10 females (U.S.N.M. collection).

Cape Province, near Knysna, November 1931 (Miss A. Mackie), 1 male, 1 female (British Museum), 1 female (U.S.N.M.).

To Cresson's original description the following critical characters may be added: Bristles and setae all black except a few fine pale ones on postbucca, at bases of femora, on coxae and on thoracic venter; mesofrons narrowly attaining lunular margin; two fine black hairs on oral margin below the posterior genal bristle and one in line between the anterior genal and the facial bristle; male with anteroventral row of soft pale hairs entire length of fore femur; in female the distal half of this row replaced by 6-8 rather slender, closely spaced, black spines; mid femur without larger or denser anteroventral or posteroventral hairs; female ovipositor blade long and slender; lobe of ninth tergite of male as in *spinosa* n.sp., with slender hooked apex; last section of fourth vein 2.2 times as long as preceding section. Length 2.75 mm.

Canace spinosa n.sp.

Male, female. Length, about 3 mm., wing 3.0 mm. by 1.1 mm.

Closely resembling *cala* in habitus and chaetotaxy but differing essentially as follows: brown colour of dorsum more reddish, the mesofrons reddish-brown and contrasting more with the blackish frontalia. Fore femur of both sexes with anteroventral armature of 4-6 very stout, long, widely spaced, black spines on distal half, these spines fully as long as thickness of tibiae and separated by a distance subequal to the length of a spine. Male genitalia as in *cala*.

Holotype male, allotype, 14 male and 23 female paratypes, Gamtoos River, lower reaches within 2 miles of the sea, 35 miles west of Port Elizabeth, Cape Province, 1 June 1953 (Stuckenberg) (Type No. 62714, U.S.N.M.).

Genus *Nocticanace* Malloch

Nocticanace cafraria (Cresson)

Canaceoides cafraria Cresson, 1934, *Trans. Amer. Ent. Soc.* 60: 222 (male; East London, Cape Province).

Nocticanace cafraria Wirth, 1951, *Occas. Papers B. P. Bishop Mus.* 20: 273 (generic transfer).

Natal, beach at Umkomaas, 9 December 1954 (Stuckenberg), 1 male, 1 female (Natal Museum), 1 male, 1 female (U.S.N.M.).

This series agrees well with the original description which, however, is rather general for specific distinction in this genus. *Nocticanace mahensis* (Lamb) 1912 from the Seychelles is very close, judging from the description, but a comparison of types or of topotypic specimens would be necessary to establish the synonymy.